

PMC-ND

(1.08.09.13)

**U.S. DEPARTMENT OF ENERGY
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
NEPA DETERMINATION**



RECIPIENT: Alden Research Laboratory, Inc.

STATE: MA

PROJECT TITLE : Modular and Scalable Downstream Passage Systems for Silver American Eels

Funding Opportunity Announcement Number	Procurement Instrument Number	NEPA Control Number	CID Number
DE-FOA-0001662	DE-EE0008338	GFO-0008338-001	

Based on my review of the information concerning the proposed action, as NEPA Compliance Officer (authorized under DOE Order 451.1A), I have made the following determination:

CX, EA, EIS APPENDIX AND NUMBER:

Description:

A9 Information gathering, analysis, and dissemination Information gathering (including, but not limited to, literature surveys, inventories, site visits, and audits), data analysis (including, but not limited to, computer modeling), document preparation (including, but not limited to, conceptual design, feasibility studies, and analytical energy supply and demand studies), and information dissemination (including, but not limited to, document publication and distribution, and classroom training and informational programs), but not including site characterization or environmental monitoring. (See also B3.1 of appendix B to this subpart.)

B3.16 Research activities in aquatic environments Small-scale, temporary surveying, site characterization, and research activities in aquatic environments, limited to: (a) Acquisition of rights-of-way, easements, and temporary use permits; (b) Installation, operation, and removal of passive scientific measurement devices, including, but not limited to, antennae, tide gauges, flow testing equipment for existing wells, weighted hydrophones, salinity measurement devices, and water quality measurement devices; (c) Natural resource inventories, data and sample collection, environmental monitoring, and basic and applied research, excluding (1) large-scale vibratory coring techniques and (2) seismic activities other than passive techniques; and (d) Surveying and mapping. These activities would be conducted in accordance with, where applicable, an approved spill prevention, control, and response plan and would incorporate appropriate control technologies and best management practices. None of the activities listed above would occur within the boundary of an established marine sanctuary or wildlife refuge, a governmentally proposed marine sanctuary or wildlife refuge, or a governmentally recognized area of high biological sensitivity, unless authorized by the agency responsible for such refuge, sanctuary, or area (or after consultation with the responsible agency, if no authorization is required). If the proposed activities would occur outside such refuge, sanctuary, or area and if the activities would have the potential to cause impacts within such refuge, sanctuary, or area, then the responsible agency shall be consulted in order to determine whether authorization is required and whether such activities would have the potential to cause significant impacts on such refuge, sanctuary, or area. Areas of high biological sensitivity include, but are not limited to, areas of known ecological importance, whale and marine mammal mating and calving/pupping areas, and fish and invertebrate spawning and nursery areas recognized as being limited or unique and vulnerable to perturbation; these areas can occur in bays, estuaries, near shore, and far offshore, and may vary seasonally. No permanent facilities or devices would be constructed or installed. Covered actions do not include drilling of resource exploration or extraction wells.

B3.3 Research related to conservation of fish, wildlife, and cultural resources Field and laboratory research, inventory, and information collection activities that are directly related to the conservation of fish and wildlife resources or to the protection of cultural resources, provided that such activities would not have the potential to cause significant impacts on fish and wildlife habitat or populations or to cultural resources.

Rationale for determination:

The U.S. Department on Energy (DOE) is proposing to provide funding to Alden Research Laboratory Inc. (Alden) to address the need for more biologically effective and less expensive downstream passage technologies for the silver American eel. More specifically, Alden would design, fabricate, laboratory test, and field test a fish (eel) bypass system.

The proposed project would contain 17 tasks.

In tasks 1-8 Alden would fabricate a test tank as well as design, fabricate, test and analyze results of the testing of a scale model fish bypass system. The test tank would be fabricated within an existing Alden research laboratory building. No new permits would be needed to fabricate the testing tank and no modifications to the existing building

would be required. The test tank would be a concrete flume 79 feet long, 20 feet wide, and 8 feet deep. The test tank would be a closed system with water being circulated through the flume to create stream flow. A release pen would be located in the upstream end of the flume. Silver American eels, which are not a listed species under the Endangered Species Act, would be held in the release pen and allowed to acclimatize prior to release.

The fish bypass system would be mounted at the downstream end of the flume. The system would contain two bypass designs, a horizontal zig zag bypass design and a vertical bypass design. The horizontal design would consist of a four foot wide aluminum plate placed on the bottom of the flume and extending across the 20 foot width of the flume. Six inch aluminum piping would be mounted onto the plate in a zig zag pattern traversing the 20 feet across the flume. Openings within the pipe, 2 5/8 inches wide, would allow eels to enter the bypass. At the end of the zig zag, attached to the side of the flume, would be an 8 foot tall vertical 8 inch aluminum pipe that would allow eels to travel up and over the tank. The second bypass system, the vertical design, would only include an 8 foot long 8 inch aluminum pipe (the same as the vertical piping in the horizontal system) mounted on the far wall of the flume. Attached to the top of each vertical pipe would be a PVC pipe that would guide the eels into a holding tank outside of the test tank.

In tasks 9-17 Alden would fabricate, test and analyze results of the testing, a full model fish bypass system. The system would be tested at the Mine Falls Hydroelectric Project, a dam located in Nashua, New Hampshire. The facility is owned by the City of Nashua and operated by Essex Hydro Associates. The bypass system would be installed at the turbine intake structure, a previously existing concrete structure that guides water into the turbine flow area of the hydroelectric facility. The full scale design would be comparable to the scale model but the horizontal zig zag would be 36 feet long, and the verticals would be 20 feet high. The bypass system would be attached to the existing concrete structure, no new earth moving or foundations would be required. As with the laboratory testing, eels would be held in a release pen prior to testing and collected in a holding tank after passing through the bypass system.

For both tests Alden would use silver American eels collected in Massachusetts or Maine. Alden has obtained necessary federal and state permits for this project, including permits for the collection and importation into New Hampshire of the silver American eel, for conducting scientific research with the eels, for handling of the eels, and for discharge into the Nashua River. There are no threatened or endangered species located within the project area.

Based on the review of the proposal, DOE has determined that the proposal fits within the class of action(s) and the integral elements of Appendix B to Subpart D of 10 CFR 1021 outlined in the DOE categorical exclusion(s) selected above. DOE has also determined that: (1) there are no extraordinary circumstances (as defined by 10 CFR 1021.410(2)) related to the proposal that may affect the significance of the environmental effects of the proposal; (2) the proposal has not been segmented to meet the definition of a categorical exclusion; and (3) the proposal is not connected to other actions with potentially significant impacts, related to other proposals with cumulatively significant actions, or an improper interim action. This proposal is categorically excluded from further NEPA review.

NEPA PROVISION

DOE has made a final NEPA determination for this award

Insert the following language in the award:

If the Recipient intends to make changes to the scope or objective of this project, the Recipient is required to contact the Project Officer, identified in Block 15 of the Assistance Agreement before proceeding. The Recipient must receive notification of approval from the DOE Contracting Officer prior to commencing with work beyond that currently approved. If the Recipient moves forward with activities that are not authorized for Federal funding by the DOE Contracting Officer in advance of a final NEPA decision, the Recipient is doing so at risk of not receiving Federal funding and such costs may not be recognized as allowable cost share.

Note to Specialist :

Water Power Program

This NEPA determination does not require a tailored NEPA provision
NEPA review completed by Roak Parker July 10, 2018

SIGNATURE OF THIS MEMORANDUM CONSTITUTES A RECORD OF THIS DECISION.

NEPA Compliance Officer Signature: _____

 Electronically
Signed By: Kristin Kerwin
NEPA Compliance Officer

Date: _____ 7/13/2018

FIELD OFFICE MANAGER DETERMINATION

Field Office Manager review required

NCO REQUESTS THE FIELD OFFICE MANAGER REVIEW FOR THE FOLLOWING REASON:

- Proposed action fits within a categorical exclusion but involves a high profile or controversial issue that warrants Field Office Manager's attention.
- Proposed action falls within an EA or EIS category and therefore requires Field Office Manager's review and determination.

BASED ON MY REVIEW I CONCUR WITH THE DETERMINATION OF THE NCO :

Field Office Manager's Signature: _____
Field Office Manager

Date: _____